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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,268	09/25/2003	Kazuyuki Matsumura	0171-1018P	3238

2292 7590 07/14/2004

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EXAMINER
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FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/669,268

Applicant(s)

MATSUMURA, KAZUYUKI

Examiner

Michael J Feely

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1712

EB

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 13 is/are rejected.
- 7) ☒ Claim(s) 9-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0903, 1203.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over Matsumura et al. (US Pat. No. 6,077,966) in view of Osawa (Pub. No.: US 2003/0139481).

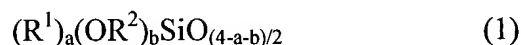
The applied reference (Osawa) has a common assignee with the instant application; however, the inventive entity is different. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). *For*

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*applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).*

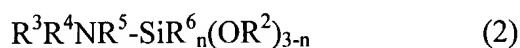
Regarding claims 1-8, Matsumura et al. disclose **(1)** a method for preparing modified wood (Abstract; column 6, lines 16-20) comprising treating wood with an aqueous water repellent [I] (Abstract), said aqueous water repellent [I] comprising a product obtained through co-hydrolytic condensation (column 1, line 66 through column 2, line 28) of:

(A) 100 pbw of an organosilicon compound of the general formula (1):



wherein  $R^1$  is a  $C_{1-6}$  alkyl group,  $R^2$  is a  $C_{1-4}$  alkyl group,  $a$  is a positive number of 0.75 to 1.5,  $b$  is a positive number of 0.2 to 3, satisfying  $0.9 < a + b \leq 4$  (column 2, lines 11-18; *see conversion table below*); and

(B) 0.5 to 49 pbw of an amino-containing alkoxysilane of the general formula (2):



wherein  $R^2$  is defined as above,  $R^3$  and  $R^4$  are each independently hydrogen or a  $C_{1-15}$  alkyl or aminoalkyl group,  $R^5$  is a divalent  $C_{1-18}$  hydrocarbon group,  $R^6$  is a  $C_{1-4}$  alkyl group, and  $n$  is 0 or 1, or a partial hydrolyzate thereof (column 2, lines 19-28; *see conversion table below*);

in the presence of an organic or inorganic acid (column 1, line 66 through column 2, line 2);

**(2)** wherein  $R^1$  of formula (1) is methyl (column 3, lines 42-47);

**(3)** wherein component (A) is a siloxane oligomer (column 3, lines 52-56);

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(4) wherein component (A) is a siloxane dimer having the formula:  $[\text{CH}_3(\text{OR}^2)_2\text{Si}]_2\text{O}$  wherein  $\text{R}^2$  is defined as above (column 3, lines 52-56 and 34-47);

(5) wherein the amino-containing alkoxysilane (B) is selected from the group *see claims for the list of compounds* (column 4, lines 7-37);

(6) wherein the co-hydrolytic condensation product of components (A) and (B) has a weight average molecular weight of 500 to 5,000 (column 5, lines 55-59); and

(7) wherein said aqueous water repellent [I] is obtained by hydrolyzing component (A) in the presence of an organic or inorganic acid and an alcohol, reacting the hydrolyzate with component (B), and then removing the alcohol from the reaction system (column 5, lines 32-55).

Matsumura component	Disclosed pbw	Conversion factor	Converted pbw
B (equiv to claimed A)	70-90	1.43-1.11	100
C (equiv to claimed B)	1-20	1.11-1.43	1.11-28.6

Matsumura et al. do not disclose the additional treatment step using an emulsion water repellent [II].

Osawa discloses a method for preparing modified "general purpose raw materials" (paragraphs 0004 and 0006) comprising treating "general purpose raw materials" with an emulsion water repellent [II] (Abstract), being a trialkylsiloxysilicate emulsion water repellent obtained by polymerizing:

(C) an organodisiloxane of the general formula (3):



wherein  $\text{R}^7$  is each independently a  $\text{C}_{1-10}$  alkyl group, and

(D) at least one of a tetraalkoxysilane of the general formula (4):



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wherein  $R^7$  is each independently a  $C_{1-10}$  alkyl group, and a partial hydrolytic condensate thereof, in such a proportion that the molar ratio of trialkylsiloxo unit:  $R^7_3SiO_{0.5}$  in component (C) to tetrafunctional units:  $SiO_{4/2}$  in component (D) may fall in a range of 0.5 to 2.0, in an aqueous solution containing (E) a surfactant and (F) water at a temperature of 30 to 90°C (Abstract; paragraphs 0007-0017). In addition, one skilled in the art would appreciate that “general purposed raw materials” would have inherently included wood materials.

In light of this, it has been found that, “It is *prima facie* obvious to combine two compositions, each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose...[T]he idea of combining them flows logically from their having been individually taught in the prior art.” – *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the compositions of Matsumura et al. and Osawa because: 1) both are used to impart water-repellency to wood products, and 2) it has been found to be *prima facie* obvious to combine two compositions, each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.

Regarding claim 13, the combined teachings are Matsumura et al. and Osawa are as set forth above and incorporated herein. Matsumura et al. disclose that applicable substrates include “wood and wood composites” (column 6, lines 16-20); while Osawa discloses that applicable substrates are “general purpose raw materials” (paragraph 0006). Neither reference explicitly teaches the use of plywood or veneer laminates; however, one skilled in the art would appreciate

that plywood and veneer laminates inherently fall into the categories of “wood composites” and “general purpose raw materials”.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use plywood or veneer laminates in the combined teachings of Matsumura et al. and Osawa because Matsumura et al. disclose “wood and wood composites,” Osawa discloses “general purpose raw materials,” and both plywood veneer laminates inherently fall into these categories of substrate materials.

#### ***Allowable Subject Matter***

4. Claims 9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

*Claims 9 and 10:* the closest prior art is Matsumura et al.; however, they provide no motivation to include an aliphatic quaternary ammonium compound in aqueous water repellent [I]. Claim 10 is allowable because it is dependent from claim 9.

*Claims 11 and 12:* the closest prior art is Matsumura et al.; however, they provide no motivation to include a boron-containing compound in aqueous water repellent [1]. Claim 12 is allowable because it is dependent from claim 11.

#### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hager et al. disclose an aqueous emulsion that is similar to aqueous water repellent [1].

*Communication*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael J. Feely  
Patent Examiner  
Art Unit 1712

July 9, 2004